Parts of an Experiment Notes

* **What are the characteristics of a controlled experiment?**
  + Normally have \_\_\_\_\_\_\_\_ types of \_\_\_\_\_\_\_\_\_\_\_
    - **Independent variable**: the factor that is \_\_\_\_\_\_\_\_\_\_\_\_ between the experimental group and control group,
      * 0nly \_\_\_\_\_\_\_in each experiment
    - **Dependent variable:** the factor being \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_or \_\_\_\_\_\_\_\_\_\_\_\_\_\_as data in the experiment for both groups
    - **Constants:** factors that are kept the \_\_\_\_\_\_\_\_\_\_\_between the groups to ensure the experiment is fair
  + Have at least \_\_\_\_\_\_\_\_\_\_\_\_groups
  + **Experimental group:** the group in the experiment that receives \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    - Can have more than one experimental group
  + **Control group:** the group that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_receive any “special” treatment
    - Used for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* **Example: Pencils**

Mrs. Butcher wanted to test her design for a new mechanical pencil. This new design had lead that was stronger and would last longer than the average mechanical pencil. Mrs. Butcher gave half her class (15 students) the new mechanical pencil and the other half the old style of mechanical pencil. She had the students use the pencils until the lead was completely gone and then record how long they used it in a table. From the data, it appeared that Mrs. Butcher’s mechanical pencil did not last longer than the older style of mechanical pencil.

* **Which people are in the control group? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **What is the independent variable? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **What is the dependent variable? ­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **What should Mrs. Butcher’s conclusion be? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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* **What are constants in Mrs. Butcher’s experiment?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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